

Historic routes to Angkor: development of the Khmer road system (ninth to thirteenth centuries AD) in mainland Southeast Asia

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Road systems in the service of empires have long inspired archaeologists and ancient historians alike. Using etymology, textual analysis and archaeology the author deconstructs the road system of the Khmer, empire builders of early historic Cambodia. Far from being the creation of one king, the road system evolved organically to serve expeditions, pilgrimages and embedded exchange routes over several centuries. The paper encourages us to regard road networks as a significant topic, worthy of comparative study on a global scale.

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Ancient road systems: context and methods of study

Investigating the chronology of road systems is complicated by their frequent reuse over long time periods and because they are comprised of multiple archaeological components that range from site to regional scales (e.g. roads, resting places, crossing points, settlements, ceramics). The archaeologist studying road systems must identify and incorporate a variety of available data sets, including historic information, within a framework of operational principles that characterise state-level road building and use. Recent trends in the study of imperial states focus on socio-cultural issues, such as power and politico-economic organisation (see D'Altroy 1992; Sinopoli 1994; Morrison 2001) and concepts of boundaries

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(see Morrison 2001; Smith 2005). An important characteristic underpinning these studies is that all states experience stages of expansion, consolidation and collapse occurring at different time scales (see Marcus 1992; Sinopoli 1994: 162-9).

In relation to state-level transportation, the concept of development has been discussed in the context of road systems built during the Roman period in Britain and mainland Europe (Forbes 1964; Margary 1967; Chevallier 1976), in early Imperial China (Needham *et al.* 1971), in Inka South America (Hyslop 1984) and protohistoric to Mughal India (Deloche 1993). From these studies four operational principles emerge. Firstly, later groups tend to reuse routes rather than construct new ones. Routes used by the Inka often show evidence that they were initiated by pre-state (Chavín 900-200 BC) or early state (Wari AD 700-1100) societies (Hyslop 1984: 271-2). Reuse may continue to the present day: many roads in Western Europe follow lines established during Roman and even pre-Roman times (Dowdle 1987: 270, 277). In Cambodia, National Route 6 is built today over an Angkorian period road.

Secondly, all routes within a system are not continuously or universally used throughout their history. States are prone to shift emphasis from individual roads and, in more extreme cases, switch to different modes of transport such as the post-Han emphasis on riverine networks over the terrestrial system (Needham *et al.* 1971: 30). Thirdly, the type and distribution of infrastructure and transport technology (i.e. road type, crossing type) are rarely homogeneous across an entire system, often varying according to terrain and distance from core territories. Different forms of road construction are employed across the Inka system (Hyslop 1984: 225-8) and the European and Middle Eastern roads of the Roman Empire (Chevallier 1976: 93; Graf 1997: 125).

The fourth principle is that road systems require substantial effort and resources for their construction and maintenance. Motivation for, and ability to create and/or formalise, a road system is therefore linked to periods of economic/political expansion and consolidation and access to sufficient manpower. Roman road-building and improvement corresponded to military advances and reigns of emperors such as Augustus or Hadrian; by contrast little roadwork was undertaken during times of civil unrest (Forbes 1964: 124-9; Margary 1967: 504). Imperial roads in China were founded in the first consolidation by the Qin (221-206 BC) and later expanded to their greatest extent during the long period of Han control (206 BC-AD 220) (Needham *et al.* 1971: 5-27).

In combination these principles provide the foundation for identifying development within transportation systems of the past. Here we apply these principles to the road system of the Khmer Empire where we will not only identify internal development but demonstrate the importance of including roads within comparative discussions of these complex societies.

The Khmer road system

The core of the Khmer Empire (ninth to fifteenth centuries AD) was controlled from the capital of Angkor through the extensive river network and over 1000km of raised earthen roads fitted with support infrastructure (masonry bridges, 'resthouse' temples, water tanks) (Figure 1). Over the past 50 years, the Khmer road system has been repeatedly viewed as part of the works ordered by a single king, Jayavarman VII, who ruled AD 1182-1218



Figure 1. Map of the Khmer road system and sites mentioned in the text (bridge locations from Bruguier 2000; GIS data compiled from JICA 2003, background – SRTM 90m DEM [<http://srtm.csi.cgiar.org/>]).

(see Parmentier 1948: 120; Groslier 1986: 40-41; Higham 1989: 337; Freeman 1996: 154; Bruguier 2000: 542; Vickery 2002: 107; Stark 2004: 109; Sharrock 2009: 119). Arguably the most visible ruler of the Angkorian period, this king refocused the court religion to Mahayana/Tantric Buddhism from Shaivite Brahmanism (see Sharrock 2009), ordered the construction of numerous temples and vigorously expanded the empire to its zenith across much of mainland Southeast Asia (Cœdès 1968: 167-77; Cunin 2004; Jacques 2007: 38-40).

Looking more critically at this claim, it is found that the association of Jayavarman VII with the road system is based on two pieces of information. The primary link is the correlation of a single Sanskrit text, inscribed on the stela of the Preah Khan temple in Angkor (AD 1191) (Cœdès 1940, 1941), describing temples along the route between Angkor and Phimai with the regularly-spaced buildings (known as fire shrines or *dharmasalas*) found on the Northwest road. The second is the intensive state-wide building programme started during his reign of nearly 40 years. However, it is argued here that this strict temporal



Figure 2. Bas relief from the Bayon temple depicting a Khmer procession.

association ignores the achievements and regional communication history of Jayavarman VII's predecessors and their successors within the 600 years of the Angkorian period.

Mainland Southeast Asia experienced centuries of communication prior to the rise of the Khmer, using terrestrial and riverine routes that enabled the movement of local and foreign goods and attracted prehistoric settlement (Bellina & Glover 2004: 69-70). Recent surveys by a joint Thai-Cambodian mission identified 23 prehistoric sites along the Northwest road between Angkor and Phimai (Living Angkor Road Project 2008: 275). This distribution suggests that part of the Angkorian road was constructed near or over a pre-existing communication route. In Cambodia, the early historic or Funan period (second to sixth centuries AD) and pre-Angkorian or Chenla period (sixth to eighth centuries AD) (Stark 2004: 97-101) saw the expansion of formalised settlements and increased regional interaction over territories that would become the heart of the Khmer Empire.

Between the ninth and fifteenth centuries the rulers of Angkor, relying on an economy of intensive rice production, controlled their territories through regional centres based around temple complexes. Angkor's engagement with its territories and beyond is attested to by depictions of marching armies and royal processions on the temple bas reliefs in the capital (Figure 2), a reference to a royal pilgrimage on a temple inscription (Cœdès 1954: 236) and reports of goods traded to and from China by foreign visitors (e.g. Zhou 1902 [1295-6]). Angkor's substantial transportation and communication requirements extended beyond the

limits of the river network and resulted in formalisation of a road system to access its regional centres directly. The road system probably functioned after the decline of Angkor as capital in the mid fifteenth century. However expansion and improvements probably coincided with cessation of state-level masonry building works in the thirteenth century. The investigation of development is therefore focused on the available evidence from the ninth to thirteenth centuries.

Temporal associations for the Khmer road system are established only through repeated examples of similarly dated structures or events. In order to better assess the issue of road development during the Angkorian period this paper will investigate multiple data sets: (1) historic documents, specifically the corpus of Sanskrit/Khmer inscriptions; (2) Angkorian Khmer centres in close proximity to the road system; and (3) transport infrastructure (e.g. bridges, 'resthouse' temples, tanks) within and along these routes.

The evidence of historic documents

Over 900 Angkorian inscriptions written in Sanskrit and/or Old Khmer on stone stelae and temple walls provide researchers with detailed information about royal genealogies and historic events (see Barth & Bergaigne 1885-93; Coédès 1935-66) as well as local and state-level economic activities (see Lustig 2009). These texts can inform transport development in two ways: by identifying the history of the words used for describing transport components (e.g. roads, bridges) and by mapping and comparing the trajectories of major historic episodes of conquest or movements into neighbouring states against the extent of the visible road network.

Transport terms appear in only a handful of Angkorian inscriptions. The Preah Khan stele K.908 written in AD 1191 (see above) describes three routes fitted with 121 *vahni-griha* (fire shrines or dharmasalas) connecting Angkor to cities whose locations have remained largely unidentified within the Khmer Empire. An important exception is the Northwest road between Angkor and Phimai (see Figure 1). Correlation of the 17 fire shrines listed to Phimai (Vimaya) with the number of known laterite temples along the Northwest road (see Living Angkor Road Project 2008: 249) points to a direct relationship between these buildings and Jayavarman VII.

In contrast, the text does not indicate Jayavarman VII's involvement with other transport components (e.g. roads, bridges), the first mention of which appear in pre-Angkorian texts as early as the seventh century (Coédès 1951: 143). Looking through the histories, a striking feature in the tenth and eleventh century is the increased appearance of transport terms, either individually or within the same text. For example, two faces of the Prasat Don Kau stele K.353, from the mid to late tenth century AD and AD 1046 respectively, refer to a '*vrah phlu*' (sacred road) bounding the temple's territories to the north and north-west (Coédès 1953: 133). While '*vrah phlu*' can refer to temple causeways, the location of Prasat Don Kau (to the south-west) and its proximity (2km) to the Northeast road strongly suggests that it was the actual boundary. Other eleventh-century texts from Phnom Sreh K.1002 (Jacques 1968: 616-17) and Sdok Kok Thom K.235 (Coédès & Dupont 1943-6) both refer to multiple components – resting places, water tanks, bridges – in association with roads. While these latter inscriptions are not state-sponsored edicts, they indicate that

Table 1. Description of events used to map historic trajectories (based on Dagens 2003: 39-41)

Event	Event description	Source	Date	King	Century
1	Movement of capital to Koh Ker	Khmer	921	Jayavarman IV	10th
2	Expedition to Champa, pillaging Po Nagar (Kauthara)	Cham	950	Rajendravarman	10th
3	Civil war in north-west Cambodia	Khmer	1002-1004	Suryavarman I	11th
4	Intervention with Buddhist community at Lopburi	Khmer	1022-5	Suryavarman I	11th
5	Rebellion in the south (possibly by the Cham)	Khmer	1051	Udayadityavarman II	11th
6	Cambodian incursion into Champa (take Sambor)	Cham	1056	Udayadityavarman II	11th
7	Rebellion in the north-east	Khmer	1060's	Udayadityavarman II	11th
8	Rebellion of Prthusaila (Phnom Rung)	Khmer	1066	Udayadityavarman II	11th
9	Campaign against Dai Viet (Thang Long?)	Vietnamese	1128	Suryavarman II	12th
10	Naval expedition to Dai Viet (Thang Long?)	Vietnamese	1129	Suryavarman II	12th
11	Campaign against Dai Viet (Thang Long?)	Vietnamese	1136	Suryavarman II	12th
12	Conquers Vijaya	Cham	1145	Suryavarman II	12th
13	First campaign against Champa	Cham	1190	Jayavarman VII	12th
14	Second campaign against Champa	Cham	1192	Jayavarman VII	12th
15	Attack on Champa at Mi Son	Cham	1203	Jayavarman VII	13th
16	Cambodian-Cham attack on Nghe-An (naval route?)	Vietnamese	1216-18	Jayavarman VII	13th

transportation infrastructure was built and deemed important enough to be documented at least 100 years prior to the Preah Khan stela recording of the placement of transportation infrastructure across Khmer territories.

Evidence from popular movement

Documented invasions, rebellions or pilgrimages involved significant numbers of people and could have provided the stimulus for the establishment of routes in the landscape. Table 1 displays a sample of 16 frequently cited historic events from Khmer, Cham and Vietnamese sources, indicating the extent and direction of Angkorian regional activity between the tenth and thirteenth centuries. Mapping the intended direction of each major movement onto the visible road system (Figure 3) implies instances of road development. Based on this model, the Northeast and East roads provide sufficient evidence of communication in the early tenth century to suggest the need for, or prior existence of, a formalised road system. The

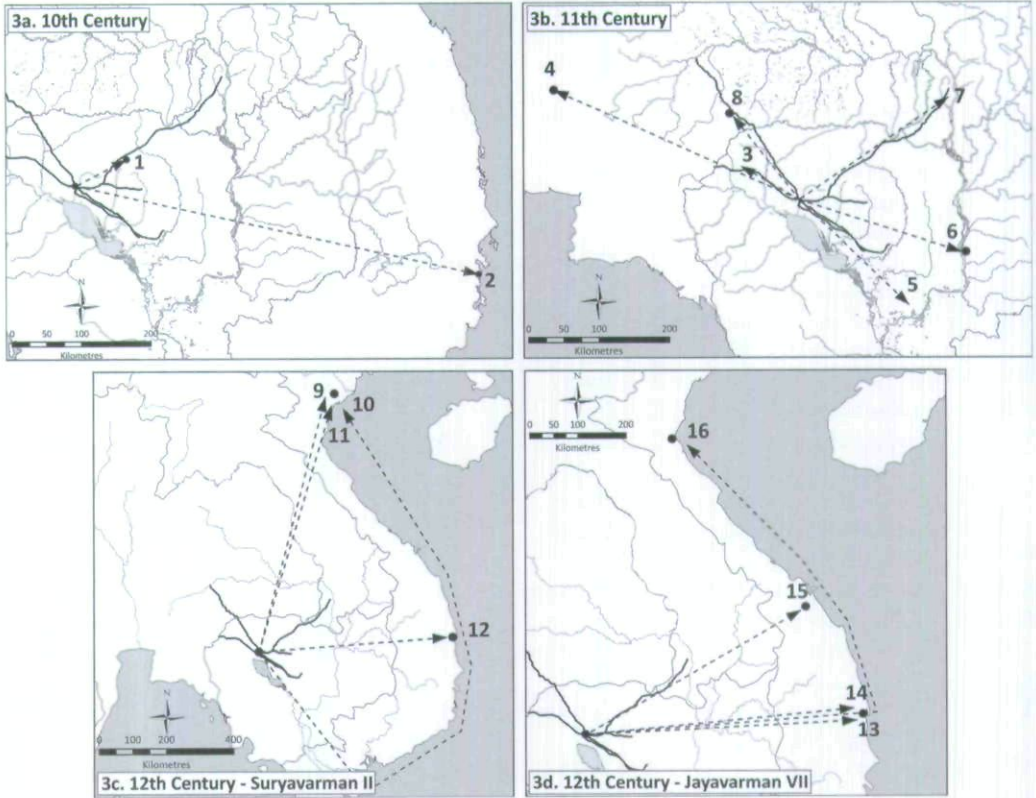


Figure 3. Map of proposed historic trajectories during the tenth (a), eleventh (b), early twelfth (c) and late twelfth (d) centuries.

shift of the capital from Angkor to Koh Ker 80km to the north-east between AD 921 and 944 (Figure 3a, Event 1) would have been facilitated by the existence of a route connecting to Vat Phu. Equally, we need to consider the imprint of a potentially large population moving between the two centres. Estimates of workers needed to build temple complexes (see Groslier 1935) and historic records detailing the number of people who 'served' at state temples, such as Preah Khan (Cœdès 1941) and Ta Prohm (Cœdès 1906), show that thousands of people would have been required. Similar numbers of people would have been required at Koh Ker suggesting that, if the region lacked an itinerant workforce, this road may have become formalised as a result of population movement between the two capitals.

A more striking overlap can be seen in events of the eleventh century (Figure 3b). Visible routes may have been established during this time in response to local rebellions (Events 3, 5, 7, 8) within the administrative core of the later Angkorian rulers. In these cases roads may have been constructed to establish or re-establish control over these territories.

Between the early twelfth (Figure 3c) and thirteenth centuries (Figure 3d), two kings, Suryavarman II and Jayavarman VII, undertook repeated long-distance expeditions against the Cham and Dai Viet and may have utilised any or all of the Northeast, East and Southeast roads to reach their eastern objectives. The fact that both kings were able to mount so many attacks on foreign states (Figure 3c-d, Events 9-16) suggests that the infrastructure was

already in place or was formalised for large-scale transportation at least by the early twelfth century.

Evidence of destinations

From a total of 21 dated sites, chosen for their proximity to the road system and/or size, two main trends can be identified (Figure 4). Firstly, sites connected to the visible road system (e.g. Vat Phu, Phimai, Preah Khan of Kompong Svay, Phnom Rung) frequently had multiple phases of construction and occupation, or political involvement with the capital. Secondly, most of the road system is connected to sites with foundations dating at least from the eleventh century, including several sites with pre-Angkorian origins (e.g. Vat Phu, Sambor Prei Kuk, Prasat Andet, Angkor). It is important to recognise the impact of long-term communication extending into this period and particularly along the Southeast and Northeast routes.

Mapping and comparing the maximum extent of communication – the furthest sites – presents a model of expansion by individual rulers that would have been in communication with the capital and may require a formalised road system. The communication territories for the major rulers presented in Figure 5 show several important trends. Between the ninth and tenth centuries the territories are markedly small and have a distinctive north-east focus. The reign of Suryavarman I, historically viewed as one of the key consolidators of the Khmer into a Southeast Asian empire (see de Mestier du Bourg 1970; Vickery 1985: 240), is associated with a dramatic shift in the area of influence during the early eleventh century. The territories of subsequent kings, particularly the other major expansionist reigns of Suryavarman II and Jayavarman VII, are comparable in size and location. In relation to the Angkorian routes, the Northeast appears to have been in use from the ninth century while the Northwest and West routes probably started in the tenth century. These and all remaining routes are continuously included in the territories between the eleventh to thirteenth centuries, the time when the Khmer reached its zenith across mainland Southeast Asia.

Evidence from infrastructure

Infrastructure, such as resting places and crossing points, is a marker of a state seeking to consolidate communication across its road system. Construction of large-scale works (e.g. masonry bridges, roads) or improvements (e.g. paving) requires considerable resources and motivation to make permanent routes. Identifying the chronology of infrastructure components is a key tool for unlocking stages in the development of individual roads and the overall system (see Hyslop 1984; Schreiber 1991: 244). For the Khmer case study, we can use the archaeological remains of 'resthouse' temples, bridges and water tanks (see Figure 6).

The Khmer road system was equipped with two different types of masonry 'resthouse' temples – fire shrines/dharmasalas) and *temples d'étapes* (literally translated as staged temples) – spaced at intervals (14-15km) approximately half a day's travel apart. Fire shrines are single-structure temples found along the Northwest road and on the East road between

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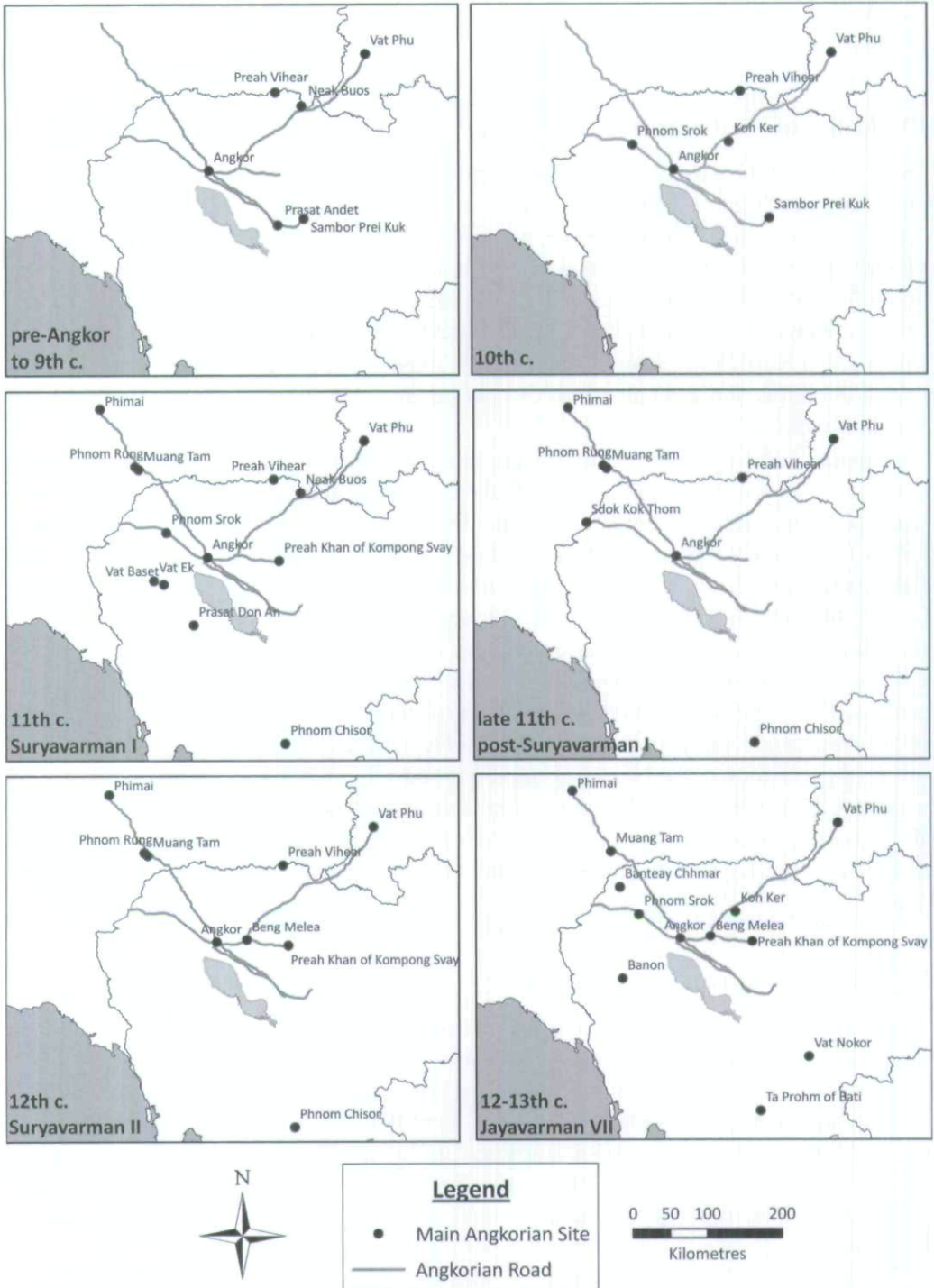


Figure 4. Construction and modification of Angkorian centres between the ninth and thirteenth centuries.

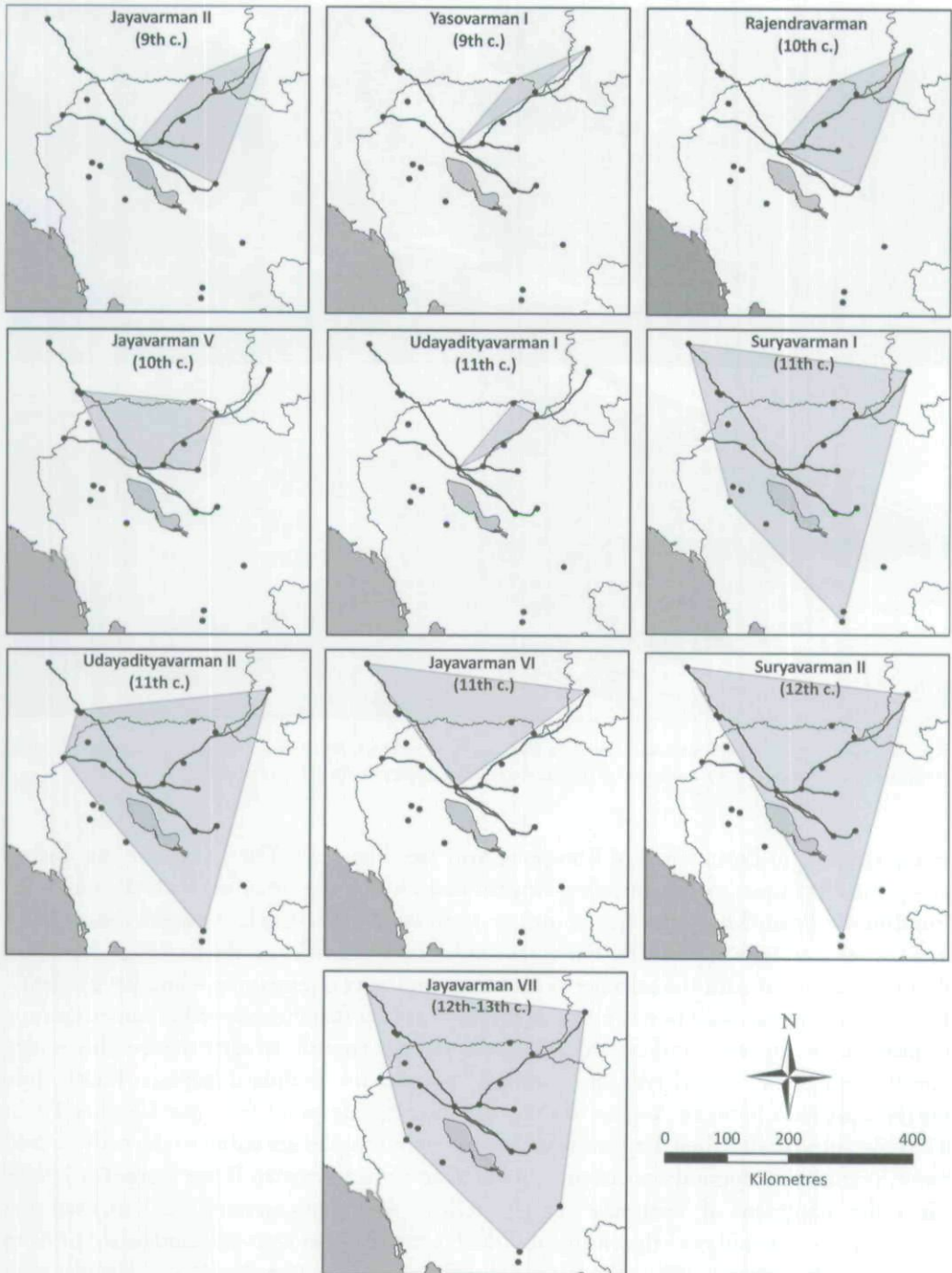


Figure 5. Changes in maximum communication territories for individual kings between the ninth and thirteenth centuries.



Figure 6. Khmer transport infrastructure. Clockwise from top left: fire shrine (Preah Khan at Angkor); interior enclosure of temple d'étape (Banteay Ampil); tanks next to the Northwest road; laterite bridge (Spean Praptos).

Beng Mealea and Preah Khan of Kompong Svay (see Figure 1). The 17 laterite fire shrines along the Northwest road connecting Angkor and Phimai are identified with the buildings listed in the Preah Khan stele (see above) and can be dated to the late twelfth century AD and the reign of Jayavarman VII. The three sandstone fire shrines on the East road, however, do not correspond with the number of buildings on the two remaining – and yet unidentified – routes in this text. The examples on the East road are therefore viewed as contemporary, or nearly contemporary, and viewed as a product of late twelfth- to early thirteenth-century construction. The second type of ‘resthouse’ temple, the temple d’étape, is found only on the East road between Angkor and Preah Khan of Kompong Svay (see Groslier 1973: 118). Architecturally, these large multiple component temples are dated to the early to mid twelfth century, the period associated with the reign of Suryavarman II (see Boisselier 1952). Since the placement of ‘resthouse’ temples follows road construction, the East road was established by the mid twelfth century and the Northwest road was well-established prior to the late twelfth century. While the limited distribution of masonry ‘resthouse’ temples may indicate an incomplete set of works, construction in perishable material or post-Angkorian destruction, they point to increasing state-level control or specific pilgrimage routes during the twelfth century – a time of significant territorial expansion by both Suryavarman II and Jayavarman VII.

Masonry bridges are ubiquitous along each of the Khmer roads up to 150km from the capital (see Figure 1). Constructed of corbelled laterite blocks they range in size from spanning major river crossings to small culverts (see Bruguier 2000). The two characteristics that provide temporal information about bridges are the decorative style of the sandstone balustrades and use of laterite masonry for water management structures. Many bridges have distinctive balustrades carved in the Bayon style common to the architectural works of Jayavarman VII. Groslier (1973: 118) has therefore argued that the balustrades and perhaps a few of the bridges are attributable to this reign. It is important to note, however, balustrades are commonly found on terraces and causeways built during the reign of Suryavarman I and especially the Angkor Wat style of Suryavarman II (Boisselier 1966: 91).

The Khmer built large-scale laterite water infrastructures in the Greater Angkor area from at least the tenth century (Fletcher *et al.* 2008), but there is currently no stylistic evidence to suggest bridges earlier than the twelfth or thirteenth centuries. Dumarçay (1992: 133-4) argues, using the model of Spean Thma to the east of Angkor Thom (which is constructed from parts of a thirteenth-century temple), that bridges would have been made of wood on a laterite skirt and then replaced with stone during the thirteenth century. However, as all the masonry bridges are built on top of this kind of laterite base, there is little to suggest stone bridge technology only began in the early thirteenth century. Bruguier (2000: 541-2), following Groslier (1973: 163), argues against Dumarçay's model, instead suggesting that the bridges found along all of the Angkorian roads were Jayavarman VII's response to the alleged Cham attack on Angkor in 1177, when the wooden structures were probably burned. While this is an interesting idea, the fact that the sacking of Angkor is now historically questioned (Jacques 2007: 36; Schweyer 2007: 63-7; Vickery 2009: 53) and the fact that stone bridges are found on all of the Angkorian roads (except the Southeast Lower road), call this explanation into question.

Further discussion of masonry bridge chronology must consider the need for viable year-round communication routes and, in the case of large examples such as the 140m long Spean Toeup, the availability of manpower and resources. Within the context of historic trajectories discussed above, there is a strong indication that substantial bridges were present long before the reign of Jayavarman VII. The amount of activity on the East road, starting in the early eleventh century and increasing through the twelfth century with the appearance of the temples d'étapes, strongly suggests that masonry bridges must have been in place. Because the Angkorian engineers were well-versed in water management structures made largely of laterite from at least the ninth/tenth centuries, we cannot discount an even earlier date for the first appearance of stone bridges. Such large masonry structures cannot be presumed to be a late twelfth-century change in the way water was managed.

Rectilinear earthen walled tanks, or *trapeang*, are among the most common archaeological features in the Khmer landscape, acting both as water management devices and sacred pools. Recent mapping of tank distribution has shown that they are regularly spaced (1.5-2.5km apart) along the Khmer roads (Hendrickson 2007: 173). Direct dating of tank construction is extremely difficult as they are made of soil and there is the problem of reexcavation/reuse. However, three indirect lines of evidence support the view that they facilitated transportation in early historic Cambodia. Firstly, is the practical consideration of the dry season between December and April. In order to survive the heat of the day, animals and people moving long

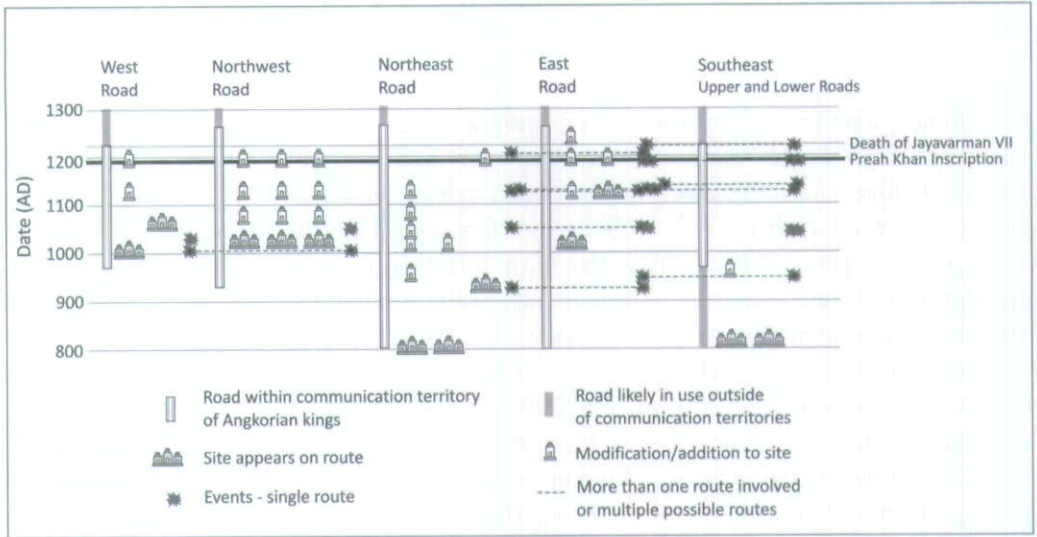


Figure 7. Summary of temporal development for the Khmer road system.

distances would require water at regular intervals. Secondly, tanks are found in association with pre-Angkor period temples such as Banteay Prei Nokor (Lunet de Lajonquière 1902: 134) and mentioned in inscriptions (Vickery 1998: 112, 195). Finally, many tanks are built with one corner directly abutting the road (see Figure 6). The Khmer would therefore have recognised the need and had knowledge of tank construction in the pre-Angkorian period, however, the placement of tanks along roads would be concurrent with or follow the construction date of each road.

Toward a developmental history of Angkor's routes

Figure 7 presents the combined analysis of historic and archaeological data for each road in the Khmer road system. It is possible to identify three general phases of development. The first phase is the product of the early polity formation processes of the pre-Angkorian period (sixth to eighth centuries), the latter part of which sees the establishment of similar architectural styles and consolidation of small kingdoms (see Vickery 1998: 390-4). While the formalised road system is most likely to be the product of Angkorian period activity, Angkor and many sites connected to it were active prior to its establishment as the official capital of the Khmer world in AD 802 (see Penny *et al.* 2006). The Southeast Lower road appears to begin in Angkor to the south of the early seventh-century pyramid temple of Ak Yum, now buried within the banks of the West Baray (Trouvé 1933: 530-1), and ends at the sixth- to eighth-century capital of Sambor Prei Kuk. The Northeast road similarly has pre-Angkorian origins as Vat Phu played an important role in Khmer histories from at least the sixth century (Maspero 1928: 64).

The second phase sees the formalisation of all the roads during the eleventh century, probably under the expansionist reign of Suryavarman I. Centres integrated within the road system helped to consolidate the core Khmer territory and it is probable that during this time wooden or masonry bridges first appeared. The final phase, between the early

twelfth and mid to late thirteenth century, sees the empire repeatedly moving into foreign territories, suggesting a well-developed transportation system. The reigns of Suryavarman II and Jayavarman VII added two types of masonry 'resthouse' temples and probably extended and/or raised roads at least to the extent visible today across mainland Southeast Asia.

The evidence presented here casts considerable doubt on the claim that Jayavarman VII was responsible for the Khmer road system. Each main artery leaving Angkor shows substantial activity prior to the late twelfth century, and none of 'his' initiated constructions (Banteay Chmar, Vat Nokor, Banon) are connected to the visible road network. The explanation for the appearance of bridges after the now questionable sack of Angkor in AD 1177 has no direct support, given that bridges appear on roads in every direction from Angkor and the Cham would have only burned wooden bridges on the eastern roads. This cannot explain the appearance of masonry bridges along the Northwest and West roads which the Cham are highly unlikely to have used, let alone damaged. Perhaps the most important evidence against Jayavarman VII's involvement is the Preah Khan inscription itself. While the text supports his association with the fire shrine temples, specifically the laterite examples, the stele neither states that he built or improved the roads, nor that he built the bridges or water tanks. It is safer to conclude that he continued the programmes of his predecessors and that his massive programme or campaign of expansion was facilitated by the existence of a well-established road system.

This conclusion adds further support to a growing body of evidence questioning whether Jayavarman VII was responsible for all the architectural works which have been attributed to his reign. Historic and architecturally-based interpretations are now placing an increased emphasis on his successor Indravarman II (AD 1218-70) (Jacques & Lafond 2004: 345, 388). This new interpretation of Khmer history does not detract from the achievements of Jayavarman VII, which include some of the most significant of any Angkorian king, but show a more dynamic view of the role of the multiple kings who ruled the Khmer Empire over several centuries.

Conclusions

The initial results presented here indicate that the Khmer road system has its origins in the pre-Angkorian period and was well-developed between the eleventh and the thirteenth centuries. The building and consolidation efforts of Suryavarman I throughout the Angkorian territories strongly suggest that the basis for the road system was established during the early eleventh century. A century later the activities of his namesake similarly point to a need to facilitate regional and international communication. This formalised system is probably a response to communication requirements not met by the already well-subscribed riverine network. Together these systems enabled the Khmer to control their core territories effectively.

Though relatively small, the Khmer road system shares the four operational principles characteristic of the roads connecting Rome or Cuzco to their empires. The first principle, that roads often follow pre-established routes, is supported by the construction dates of sites along the roads. Contrary to the conventional late twelfth-century inception model, the six main roads radiating out of Angkor suggest origins several centuries before the

reign of Jayavarman VII. The second principle is that the skeleton of this system represents a palimpsest of transport history, with each road experiencing different levels of use over time. Historic trajectories, particularly the eastward invasions from the early twelfth century, and placement of 'resthouse' temples probably positioned to enable pilgrims, demonstrate different uses of roads through time. The limited distribution of the 'resthouse' temples also illustrates the third principle, that the roads are not universally fitted or built equally across the system. Finally, as with the Roman and Chinese systems, Khmer roads and infrastructure appear to have been formalised and expanded during times of relative stability and economic growth.

Using the principles evident in other imperial states, this study has provided new insights into the nature and development of the Khmer road system. Perhaps more importantly, this paper illustrates the need to include the Khmer in discussions of the achievements of other states and empires.

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